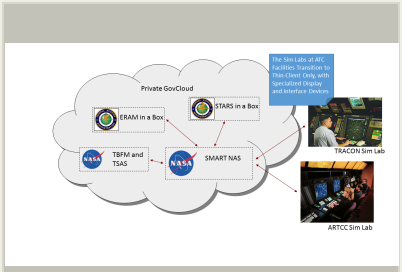
Small Business Innovation Research/Small Business Tech Transfer

Simulation-Based Tool for Traffic Management Training, Phase II

Completed Technology Project (2017 - 2019)

Project Introduction

Both the current NAS, as well as NextGen, need successful use of advanced tools. Successful training is required today because more information gathering and decision making must be done manually, which requires training in the fundamental principles and objectives of traffic management. Successful training is required in NextGen due to the increased reliance on automation. Given the multitude of input channels and actors that must be included in an environment for comprehensive training of Traffic Management Coordinators (TMCs), it would be too costly and too complex to attempt a full-scale human-in-the-loop simulation or table-top exercise that includes the direct participation of all of these entities. In Phase I of this research, we studied and prototyped effective techniques and technologies to allow virtual and/or constructive simulation of key components of the TMC's environment to achieve a significant step forward in the state of the art of TMC training. In Phase II, we will conduct further research on Traffic Management (TM) training techniques and create a more comprehensive prototype system for evaluation. The proposed innovation and focus on this research is called the COMprehensive Environment for TM Training by Simulation (COMETTS). NASA's recent research thrust in the Shadow Mode Assessment using Realistic Technologies for the National Airspace System (SMART NAS) Test Bed provides an important step toward, and platform for, research in simulation-based training for the controller and TMC workforce. Such research holds the potential to significantly improve the transition of technologies from NASA to the FAA and onward to fully successful implementation and acceptance by the end users. This proposed effort will leverage SMART NAS to conduct research, development, prototyping and evaluation of advanced simulation-based TMC training.



Simulation-Based Tool for Traffic Management Training, Phase II Briefing Chart Image

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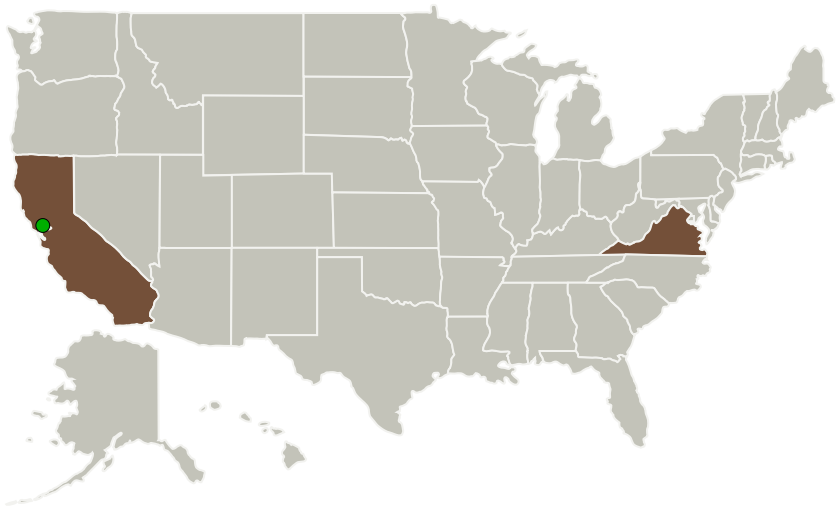
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Mosaic ATM, Inc.	Lead Organization	Industry	Leesburg, Virginia
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Virginia

Project Transitions

May 2017: Project Start

April 2019: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/141088)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Mosaic ATM, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

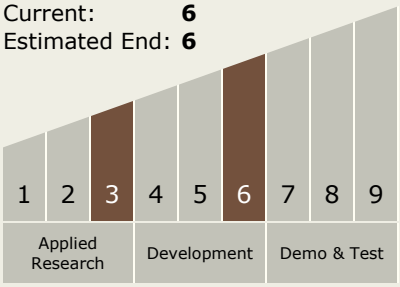
Carlos Torrez

Principal Investigator:

Chris Brinton

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



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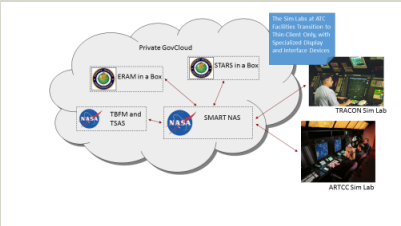
Images



Briefing Chart Image
Simulation-Based Tool for Traffic Management Training, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/133833)*

Final Summary Chart Image
Simulation-Based Tool for Traffic Management Training, Phase II *(https://techport.nasa.gov/image/125909)*

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.3 Traffic Management Concepts

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System